CURRENT LITERATURE

BOOK REVIEWS

American trees

Books on trees, most of them of a popular or semi-scientific character, have been produced abundantly within recent years, and many, limiting their scope to some particular region of our country, have successfully met an increasing demand, and have contributed materially to furthering the interests of botanical science. In a recent publication MATHEWS[1] has attempted to include within the limits of a single volume, not only all the trees of the continent that would be likely to interest the informal student of nature, but also the shrubs as well. This is a difficult, if not an impossible task, and it is not surprising that the result, while in many respects excellent, is open to some unfavorable criticism.

One of the first difficulties would naturally be to make a wise selection of the number of species to be included. That this number is large is shown by the inclusion of 25 species of pine, 2 of them European; the same number of oaks; 31 willows; 11 shad bushes; 13 maples; and, still more surprising, 24 species of *Vaccinium*, 15 of *Viburnum*, and 69 of *Crataegus;* while many other genera have been treated with equal generosity. For example, it is hard to see why the white birch should be separated into 7 species and varieties for other than a strictly technical botanical audience. The same criticism would apply with even greater force to *Salix*, *Amelanchier*, and *Crataegus*, especially as the descriptions, although on the whole excellent, are not sufficiently exact and critical to enable even a well-trained botanist to identify a doubtful specimen within these genera. The difficulties are here accentuated by the entire absence of all adequate keys. This is perhaps the most serious fault of the book, and were it not for the extensive series of excellent drawings of leaves and fruit, identification by its aid would be a hopeless task. These drawings, on the contrary, are among the best that have yet appeared, and covering 128 full-page figures and about five times that number of species they seem quite worth the price of the volume. The 66 plates of habit studies of individual trees, 16 of them in color, do not appeal to the reviewer as at all equal to the figures, and could be omitted without serious detriment to other than the possibly artistic value of the book. Other commendable features are the good descriptions of most of the species, the extensive and accurate data as to their distribution, supplemented by some 80 small maps, on each of which the areas

[1] MATHEWS, F. S., Field book of American trees and shrubs. 8vo. pp. xvii+465. *pls. 128.* New York: Putnam. 1915. $2.00.

occupied by 2 to 4 different species are plotted. These things, together with the convenient size of the volume, make the book, in spite of its evident defects, a desirable addition to our non-technical botanical handbooks.—GEO. D. FULLER.

Texts on colloid chemistry

The plant is made in the main of colloids. Notwithstanding this fact, until recently, so far as we have tried to explain its activity on the chemical basis at all, it has been largely in accordance with laws of homogeneous systems. Lately we are coming to realize that the laws of colloids are of first importance in answering many questions concerning the plant, its environment, and the interrelation of the two.

With the translation of the first half of OSTWALD'S *Grundriss der Kolloidchemie*[2] we have an excellent statement of a portion of the principles of the subject available in English. OSTWALD was turned into colloid chemistry by certain problems met in biology, and the translator is an animal physiologist dealing with very fundamental problems in the colloidal side of his subject. These facts should especially interest biologists in the book. It is to be regretted that the second half has not yet appeared in German, and is therefore not available for translation; but one sees the rapidity of the growth in colloid chemistry when he recognizes that the first half passed through three editions without opportunity for writing the second half.

OSTWALD, with his attractive way of presenting a subject, hardly needs an introduction to an American scientific audience, following his recent extensive lecture tour in this country. The translator says "WOLFGANG OSTWALD'S writings represent in colloid chemistry what those of CHARLES GERHARDT represent in organic, JUSTUS LIEBIG in agricultural, and WILHELM OSTWALD in physical chemistry." Notwithstanding the fact that many phases of the subject of greatest interest to physiologists are still to be treated in the second half, the volume is a much-needed reference book for plant workers.

TAYLOR'S[3] book upon colloids is a far less exhaustive statement, but offers a good general outline of the subject. Part I (163 pp.) deals with general properties of colloids; part II (56 pp.), with methods of preparation; part III (42 pp.), with surface phenomena or adsorption; and part IV (56 pp.), with applications of colloid chemistry (semi-colloids, dyeing, tanning, soil, purification of sewage, and applications to biology). Those interested only in the general principles of the subject will find this little book most satisfactory.

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[2] OSTWALD, WOLFGANG, A handbook of colloid chemistry. 1st Eng. ed. translated from 3d Ger. ed. by MARTIN H. FISCHER, with the assistance of R. E. OESPER and L. BERMAN. 8vo. pp. xii+278. Philadelphia: P. Blakiston's Son & Co. 1915. $3.00.

[3] TAYLOR, W. W., The chemistry of colloids and some technical applications. pp. vi+328. New York: Longmans, Green, & Co. 1915. $2.00.